

## **REMARKS**

By this amendment, claim 1 is amended. Accordingly, claims 1-18 are currently active in this application, of which claims 1, 5, 12, 16 and 18 are independent. Applicant respectfully submits that the above amendments do not add new matter to the application and are fully supported by the specification.

Entry of this Amendment is respectfully requested because it places the present application in condition for allowance, or in the alternative, better form for appeal. In view of the above Amendments and the following Remarks, Applicant respectfully requests reconsideration and withdrawal of the objections and rejections for the reasons discussed below.

### **Allowed/Allowable Claims**

Applicant appreciates the indication that claims 3, 9 and 10 contain allowable subject matter. While Applicant agrees these claims are patentable over the cited references, Applicant does not agree that patentability resides in each feature exactly as expressed in the claims, nor that each feature is required for patentability of each claim.

### **Rejection of Claims under 35 U.S.C. §103**

Claims 1, 2, 4-8 and 11-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent No. 5,977,940 issued to Akiyama, et al. ("Akiyama"). Applicant respectfully traverses this rejection for at least the following reasons.

With respect to claims 1, 2 and 4, independent claim 1 recites “a memory cell unit for receiving the first control signal and the second control signal from the control signal line unit.” In this regard, the Examiner admitted that Akiyama fails to disclose this claimed feature (Office Action, page 6). Regarding this missing feature, the Examiner stated “Note  $V_{ref}$  and  $V_{cs}$  are received by block 15 as shown in figure 1A/B” and asserted “It would have been obvious ... to utilize the apparatus Akiyama et al. then modify the control signal line unit to provide control of memory cell 803 to obtain the apparatus Akiyama” (Office Action, page 6). This assertion is respectfully traversed.

First, it was confusing and unclear from the Office Action as to how the Examiner wants to modify the structure shown in Fig. 1A of Akiyama. Thus, it was assumed that the Examiner modifies Akiyama such that the block 15 in Fig. 1A is replaced with the memory 803 of Fig. 8 and the signal  $V_{ref}$  and  $VC_{S2}$  are connected to the memory 803 as control signals.

This assertion is respectfully traversed because there is no motivation to connect  $V_{ref}$  line to the memory 803. In Fig. 1A of Akiyama, the reference  $V_{ref}$  is provided to the comparator 3 to determine whether the input voltage  $VC_{S2}$  is higher or lower than the reference voltage  $V_{ref}$ . Thus, if the entire block 15 including the comparator 3 is replaced with the memory 803, there would be no reason to provide the reference voltage  $V_{ref}$  to the memory 803 simply because it has no use.

Also, the voltage  $V_{ref}$  is a reference voltage that maintains the same voltage level. Thus, even if the voltage  $V_{ref}$  is provided to the memory 803, the voltage  $V_{ref}$  cannot be used as a control signal. Further, the voltage  $VC_{S2}$  is an input signal voltage,

which should be stored in the memory 803 if the voltage  $VC_{S2}$  is applied to the memory 803. Thus, it is submitted that voltages  $V_{ref}$  and  $VC_{S2}$  are not control signals.

For these reasons, it is submitted that there is no motivation for the asserted modification. Thus, it is submitted that claim 1 is patentable over Akiyama. Claims 2 and 4 are dependent from claim 1 and hence would be also patentable at least for the same reasons.

With respect to claims 5-8 and 11, independent claim 5 recites "a level shift unit ... lifting the high state by as much as the second power, generating an inverting signal, and outputting the inverting signal."

In this regard, the Examiner asserted that the inverting circuit 103 shown in Fig. 6 of Akiyama corresponds to the claimed level shift unit (Office Action, page 8). However, the Examiner has not pointed out where Akiyama discloses or suggests the inverting circuit 103 *lifting the high state by as much as the second power*, as claimed. In fact, the Examiner has not even asserted that Akiyama can be modified such that the inverting circuit 103 lifts the high state by as much as the second power.

If the Examiner wishes to maintain the position that claim 5 would have been obvious from Akiyama, the Examiner is respectfully requested to (a) assert that it would have been obvious to modify Akiyama such that the inverting circuit 103 lifts the high states by as much as the second power and (b) explain why the asserted modification would have been obvious in the next action. Thus, it is submitted that claim 5 is patentable over Akiyama. Claims 6-8 and 11 are dependent from claim 5 and hence would also be patentable at least for the same reason.

With respect to claims 16 and 17, independent claim 16 recites “a power unit for supplying a first power, a second power and a third power to pixels” and “a level shift unit in electrical communication with the second control signal for generating an inverting signal and increasing a voltage.”

In this regard, the Examiner asserted that Akiyama discloses the claimed power unit supplying three powers (i.e. first, second and third powers) to the pixels (Office Action, page 11). However, the Examiner has not pointed out where Akiyama discloses or suggests supplying three powers as claimed. Further, the Examiner admitted “Akiyama does not teach a level shift unit communication with the second control signal for generating an inverting signal and increasing a voltage” (Office Action, page 12).

The Examiner further asserted that it would have been obvious to modify Akiyama to include the claimed feature of “a level shift unit in electrical communication with the second control signal for generating an inverting signal and increasing a voltage” because of the structure of the inverting unit 103 shown in Fig. 6.

This assertion is respectfully disagreed with because the Examiner's asserted modification of Akiyama still excludes the claimed power unit supplying three powers. The Examiner has not provided any reasonable explanation as to why the asserted modification of Akiyama requires three voltages and why the asserted modification of Akiyama requires a power unit to be in electrical communication with the second control signal. Thus, it is submitted that claim 16 is patentable over Akiyama. Dependent claim 17 would be also patentable at least for the same reason.

With respect to claim 18, this independent claim recites “a memory cell storing and transmitting the image signal from the pixel switch to the liquid crystal capacitor

during the first period and providing at least one of the stored image signal and an inversion signal to the stored image signal for the liquid crystal capacitor during the second period.” In other words, the memory cell performs the functions of (a) storing the image signal in the first period and (b) providing at least one of the stored image signal and an inversion signal during the second period.

In this regard, the Examiner stated “a memory cell storing and transmitting the image signal from the pixel switch to the liquid crystal capacitor (memory 202 shown in figure 7) during the first period and providing at least one of the stored image signal and an inversion signal to the stored image signal (polarity inverter 105, figure 6, column 15, lines 49-50)” (Office Action, page 13). It appears that the Examiner is asserting that the claimed memory cell can be met by combining the memory 202 in Fig. 7 and the polarity inverter 105 in Fig. 6. This assertion is respectfully disagreed with.

In Akiyama, the memory 202 stores the digital data sampled by the sampling circuit 201, and the memory 202 cannot be combined with the inverting unit 103 unless it is accompanied by the sampling circuit 201 and the DA converter 203. Thus, it is submitted that there is no motivation to combine the memory 202 with the inverting circuit 105. For this reason, it is submitted that claim 18 is patentable over Akiyama.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 2, 4-8 and 11-18.

### **Other Matters**

In this response, claim 1 has been amended solely for the purposes of informality correction, better wording and clarification. This amendment is not made for the

purpose of avoiding prior art or narrowing the claimed invention, and no change in claim scope is intended. Therefore, Applicant does not intend to relinquish any subject matter by this amendment.

## **Conclusion**

Applicant believes that a full and complete response has been made to the Office Action and respectfully submits that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicant respectfully submits that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully Submitted,

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